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USE OF A BENZIMIDAZOLE DERIVATIVE WITH POTENT MORPHINE-LIKE PROPERTIES ORALLY AS A PRESUMPTIVE REINFORCER IN CONDITIONING OF DRUG-SEEKING BEHAVIOR IN RATS. Alexander Wikler, Phillip C. Green,* Herbert D. Smith* and Frank T. Pappas.* NIMH Addiction Research Center, USPHS Hospital, Lexington, Kentucky.

When water-deprived, non-satiated rats (C) and rats (E) stabilized on 200 mg/kg of morphine s.c. once daily (tested 18-22 hrs abstinent) drank a 5 mg/ml aqueous solution of 1- (beta-diethylaminoethyl)-2-(p-ethoxybenzyl)-5-nitrobenzimidazole methane sulfonate (IG2) avidly, and exhibited morphine-like effects within 4-7 min (66-100 mg/kg ingested), with cessation of spontaneous skin twitches (abstinence sign) in E. During the first 3 min, intragroup differences between relative amounts of IG2 and tap water consumed from either of 2 drinking tubes were not significant, regardless of side placement of IG2, indicating inability of C or E to discriminate by taste alone. Training by pairing effect of IG2 with discriminatory stimuli (DS) is now in progress. Similar C and E were trained to operate a lever for IG2 or water rewards (with DS) when water-deprived (WD) and water-satiated (WS), all four conditions randomized and balanced. On WS days, frequencies (f) of lever-pressing for IG2 were significantly higher in E than C, suggesting acquisition of preference by E, but intragroup differences for IG2 or water were not significant. Intergroup comparisons of f under continuous WD are being made at intervals after morphine-withdrawal in E to test for relapse.

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